

Math 180
Winter, 2009

Name _____

Homework #9
Due Thursday, January 22
No late papers accepted! No excuses!

1. Find each derivative.

a) $y = \ln(2e^{-t} \sin t)$

b) $y = (x+2)^{x+2}$

c) $y = \arcsin\left(\frac{1}{\sqrt{x}}\right)$

d) $y = (1 + x^2)e^{\arctan x}$

e) $\ln\left(\frac{x}{y}\right) = 1$

2. Are there any points on the curve $y = x - e^{-x}$ where the slope is 2? If so, find them.

3. Water drains from a conical tank with a radius of 4 feet and a height of 10 feet at a rate of 5 cubic feet per min. How fast is the water level dropping when the height is 6 feet?